# Watkiss PowerSquare™200 User Manual

English, Issue 1f, November 2007

WATKISS
AUTOMATION

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# CHAPTER 1 Introduction to the Watkiss PowerSquare™200

Thank you for choosing the Watkiss PowerSquare™200.

## Your Manual

The Watkiss PowerSquare™200 User Manual describes how to do these tasks.

- Operate the Watkiss PowerSquare™200
- Find and correct error conditions
- Do normal maintenance tasks

Operator training is given when the PowerSquare is installed. To make sure you use your PowerSquare correctly, read your manual.

The Watkiss PowerSquare™200 User Manual does not describe the operation of the printer. If needed, refer to your printer user manual.

In this manual the Watkiss PowerSquare™200 is referred to as the PowerSquare.

## Safety Information

Safety information is included in the separate “Safety Information Manual”. *Read the safety information before you use your PowerSquare*.

## Warning and Caution Messages

The warning and caution messages used in this manual are shown below.

**WARNING** A WARNING message tells you that a procedure or operation can be dangerous. To prevent injury, you must follow the instructions.

**CAUTION** A CAUTION message tells you that a procedure or operation can damage the machine or the product. To prevent damage, you must follow the instructions.

### Installation

Your PowerSquare must be installed by a Watkiss service engineer. Special knowledge is needed to install the machine.

**CAUTION** Only connect the machine to a mains power supply of the correct voltage with a good earth-connection. The correct machine-voltage is shown on the label at the mains power supply input on the rear of the machine. If the machine is connected to the wrong supply, the warranty is cancelled.

### How to Get Help

If you have any questions or problems, refer to the problem solving section in this manual (see “Error Conditions, Problems and Solutions” on page 31). Contact your PowerSquare supplier for further help.

## Description of the PowerSquare

### Introduction

The PowerSquare operates online with digital printers to process sets of printed pages into stitched books. The main parts are shown below.

### Operator Side of the PowerSquare

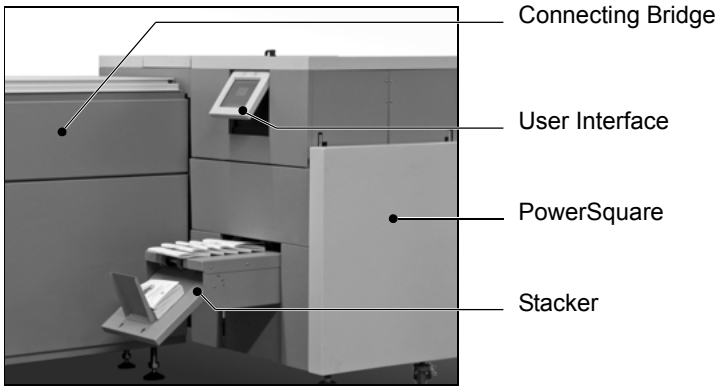



FIGURE 1. Operator Side of the PowerSquare.

### Component - Function Table

| Component | Function |
|---|---|
| The connecting bridge | The connecting bridge moves the printed sheets from the printer to the PowerSquare. If needed, the sheets are rotated into the correct direction. Rotation lets the printer operate at optimum print speed.<br>Adjustment for the size of the paper and sheet rotation is automatic, according to the settings entered on the touch screen. |
| The user interface | The user interface has a colour touch screen, a start button and a stop button . |
| The PowerSquare | The PowerSquare stitches, folds, spine-forms and trims the sheets to make a finished book. |
| The stacker | The stacker collects the finished books. |

### Right Hand Side of the PowerSquare

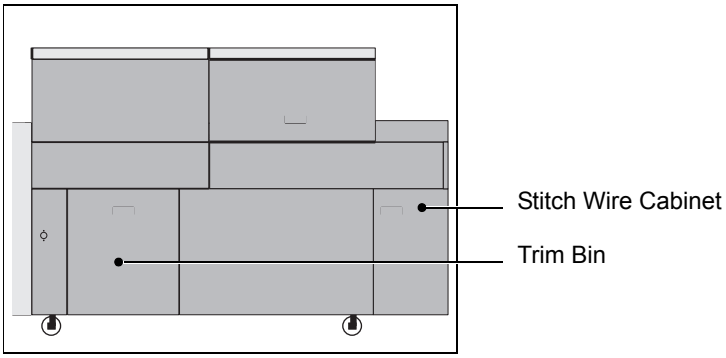



FIGURE 2. Right hand side of the PowerSquare.

### Component - Function Table

| Component | Function |
|---|---|
| The stitch wire cabinet | The stitch-wire cabinet holds the spool of stitch-wire. |
| The trim bin | The trim bin collects the paper that is trimmed from the edge of the book. |

## The Rear Panel of the PowerSquare

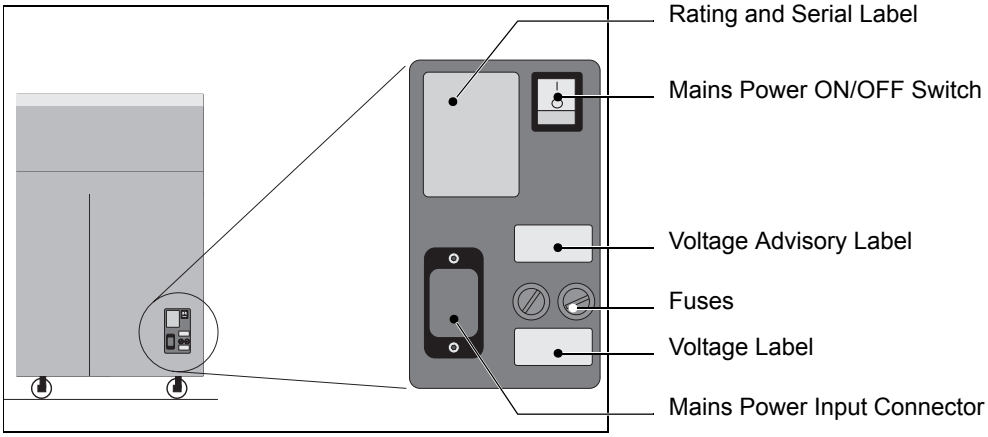



FIGURE 3. The Rear Panel of the PowerSquare.

## Component - Function Table

| Component | Function |
|---|---|
| Rating and serial label | The rating label displays the type of machine, serial number, power use and fuse information. |
| Mains power ON/OFF switch | The mains power ON/OFF switch turns ON or turns OFF the PowerSquare. When you turn OFF the PowerSquare, the current settings are stored. |
| Voltage advisory label | The voltage advisory label tells the installer to refer to the installation instructions before the PowerSquare is connected to mains power. The PowerSquare can be adjusted for one of several different input voltages. |
| Fuses | The fuses make sure the operator and the machine are protected if there is an electrical problem or short circuit. |
| Voltage label | The voltage label is fitted to the PowerSquare during the installation procedure. The voltage label displays the selected voltage. |
| Mains power input connector | The mains power input connector is used to connect the PowerSquare to mains electrical power. |

# CHAPTER 2 How to Run the PowerSquare

## Introduction

This chapter gives information on how to run a job on the PowerSquare. For information on how to operate the printer, refer to the printer documentation.

Information about the user interface is included in “The User Interface” on page 11.

Information about standard procedures, for example opening covers to clear a paper jam, is included in “Standard Tasks” on page 21.

# Before You Begin

### Paper and Book Quality Instructions

- The size of paper and the thickness of the set must be measured. These measurements are entered into the touch screen before you begin a print job.
- Measure the size of the *printed* paper. The paper dimension changes when the paper is printed.
- Measure the set thickness as accurately as possible. Use the measuring tool supplied with the machine.
- Enter accurate dimensions into the touch screen.
- If the book is made from several different types of paper, make sure the different paper types are all the same size.

See “Book Quality” on page 37 for further information.

# Turn On the PowerSquare

### Procedure

1. Connect the PowerSquare to the mains power supply.
2. Use the mains ON/OFF switch to turn ON the PowerSquare.

The machine makes this sequence of beeps:
‘beep__beep beep beep beep_____beep beep’.

The touch screen illuminates and the machine is ready for use.

# Enter the Job Settings

### Introduction

Make the settings for a new job in the **BASIC** ⌂ window on the touch screen.
See “The User Interface” on page 11 for more information.

The **PAPER SIZE** and **PAGE DIRECTION** settings are entered on the touch screen. These dimensions refer to the format of the paper when it enters the PowerSquare.

**CAUTION:** Do not operate the touch screen with a sharp object or with too much force. These actions can damage the touch screen.

### Before You Begin

1. Print a set to the stacker.
2. Measure the sheet size and the set thickness.
3. Use these dimensions for the job setting.

This set can be made into a book. See “Operate the PowerSquare offline” on page 29.

### Procedure

| If the Print Job is | then follow this procedure |
|---|---|
| a standard paper size | “Job Setting for a Standard Paper Size” on page 7. |
| not a standard paper size | “Job Setting for a Non-Standard Paper Size” on page 7. |
| a saved job | “Job Setting for a Saved Job” on page 8. |

### Job Setting for a Standard Paper Size

| Step | Action | Information |
|---|---|---|
| 1 | Touch **BASIC** ⌂. | |
| 2 | Enter the paper size and page direction. | Touch **PAPER SIZE > PRESETS > A3** or **A4**. (USA: **11x17**, **8.5x11** or **8.5x14**)<br>The **PAGE DIRECTION** is **PORTRAIT**.<br>If needed, touch **PAGE DIRECTION > LANDSCAPE**. |
| 3 | Enter the set thickness. | Touch **THICKNESS.** Enter the measured value. |
| 4 | Enter the number of stitches. | Touch **STITCHES** and enter the number of stitches. |
| 5 | Touch **CLOSE.** | |

### Job Setting for a Non-Standard Paper Size

The job setting is easier if you first select a standard paper size, then adjust the settings as necessary.

| Step | Action | Information |
|---|---|---|
| 1 | Touch **BASIC** ⌂. | |
| 2 | Enter the paper size. | Touch **PAPER SIZE**. Enter the dimensions of the paper. |
| 3 | Enter the page direction. | Touch **PAGE DIRECTION > LANDSCAPE** or **PORTRAIT**.<br>If the **PAGE DIRECTION** option is not available, the **PAGE DIRECTION** cannot be changed. |

| Step | Action | Information |
|---|---|---|
| 4 | Enter the page rotation setting. | For A4 paper size, the normal setting for **ROTATE** is **ON**. Rotation lets the printer operate at optimum speed.<br>Touch **ROTATE** to turn the sheet rotation **ON** or **OFF**. Always select the page direction before you change the rotate setting. |
| 5 | Enter the set thickness. | Touch **THICKNESS.** Enter the measured value. |
| 6 | Enter the number of stitches. | Touch **STITCHES** and enter the number of stitches. |
| 7 | Enter the spine form setting. | The spine form setting is automatic, according to the **THICKNESS** setting. If needed, the setting can be changed. See “FORM” on page 15 |
| 8 | Enter the trim setting. | The trim setting is automatic, according to the **PAGE SIZE** and **THICKNESS** settings. To change the setting, touch **TRIM**. See “TRIM” on page 16 |
| 9 | Touch **CLOSE.** | |

**Job Setting for a Saved Job**

1. Touch **LOAD & SAVE** 🗀.
2. Touch the job name or use the Up arrow and the Down arrow to select the job.
3. Touch **LOAD**.
4. Wait until the PowerSquare is ready.

## Adjust the Stacker

Adjust the collection table on the stacker according to the size of the finished book. See “Adjust the Stacker Collection Table” on page 27.

## Adjust the Position of the Gate in the Gathering Area

Adjust the gate in the gathering area into the ‘up’ position for jobs of 1 to 3 sheets or the ‘down’ position for jobs of more than 3 sheets. See “Adjust the Gate in the Gathering Area” on page 28.

# Run the Job

### Procedure

1. Make sure the adjustments on the PowerSquare are complete before you release the print job from the print queue.
2. Start the print job. The PowerSquare starts automatically.
3. Check the quality of the first book.
4. If the quality is not acceptable, make adjustments. See “Book Quality” on page 37 for further information.

### During the job

- Unload books from the stacker before the stacker is full. The PowerSquare stops and displays a message if the stacker is full.
- Empty the trim bin from time to time. The PowerSquare displays a message if the trim bin is full. See “Empty the Trim Bin” on page 26.

# CHAPTER 3 The User Interface

The user interface includes a colour touch screen and START/STOP buttons.

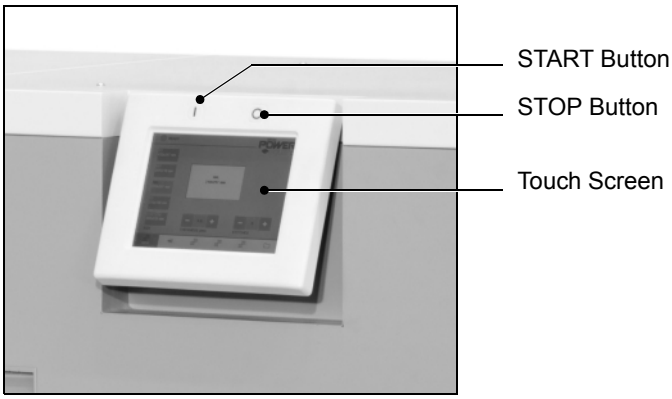



FIGURE 4. The User Interface

## The Touch Screen

### Introduction

Operate the touch screen with a fingertip. You can touch the screen with a blunt item, for example a palm-top ‘wand’ or the blunt end of a pen. Do not use too much force. A light touch is all that is needed.

**CAUTION:** Do not operate the touch screen with a sharp object or with too much force. These actions can damage the touch screen.

### Power save

The touch screen has a power-save function. After several minutes without use, the brightness of the touch screen decreases. After several hours, the touch screen turns off.

Touch the screen to restore the normal brightness. The touch screen takes two or three minutes to reach full brightness.

## Illustration

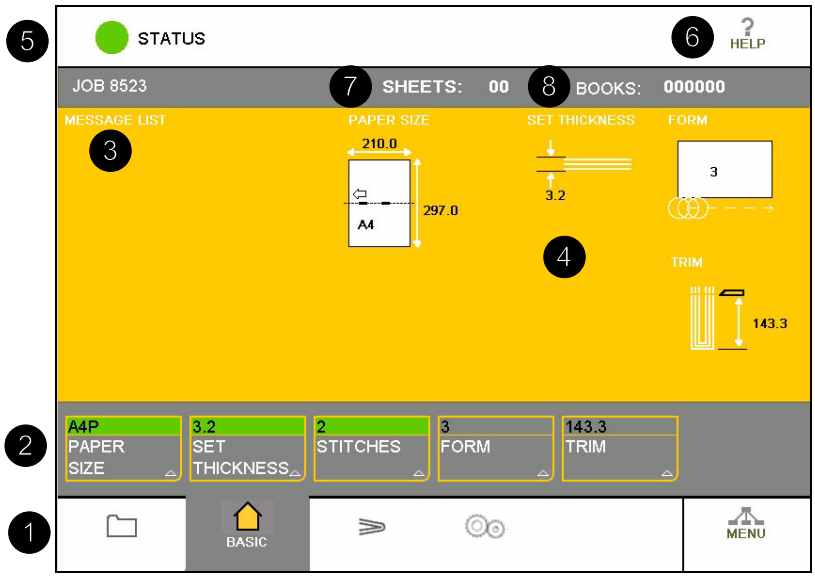



FIGURE 5. The Touch Screen

### Component - Function Table

| No. | Component | Function |
|---|---|---|
| 1 | Window Tabs | The touch screen buttons are divided into groups that have connected functions. Each group of buttons has a separate window. Touch the correct tab to select the window.<br>**LOAD & SAVE**<br>**BASIC**<br>**ADVANCED**<br>**CONFIGURE**<br>**MENU** |
| 2 | Window Buttons | Each window contains a group of buttons. Touch the button to select the function. |
| 3 | Message List | Information and error messages are shown in the **MESSAGE LIST**. To display the information about a message, touch **HELP** then touch the message list. |
| 4 | Job Mimic | The job mimic shows the current machine settings. |
| 5 | Status | The **STATUS** line shows the machine status. |
| | - GREEN | The PowerSquare is **READY** or **RUNNING**. |
| | - ORANGE | **PLEASE WAIT** - wait until the PowerSquare is ready.<br>**ATTENTION** - the PowerSquare needs an action by the operator. |
| | - RED | The PowerSquare is in an **ERROR** condition. |
| 6 | Help | Help text is available on the touch screen.<br>• Touch **HELP** then touch any button or tab on the screen. Information about that button or tab is displayed.<br>• Use the Up arrow and the Down arrow to scroll-up and scroll-down the screen.<br>• Some text has more than one screen. Use the right-arrow and left-arrow to see the other screens.<br>To leave the help-text, touch **HELP** or touch **X**. |
| 7 | Sheet Counter | The sheet counter shows the number of sheets in the gathering area. The counter starts again with each book. |
| 8 | Book Counter | The book counter shows the number of books made. The counter is reset to zero when the PowerSquare is turned off. |

# The Job Mimic

The job mimic shows the current machine status.

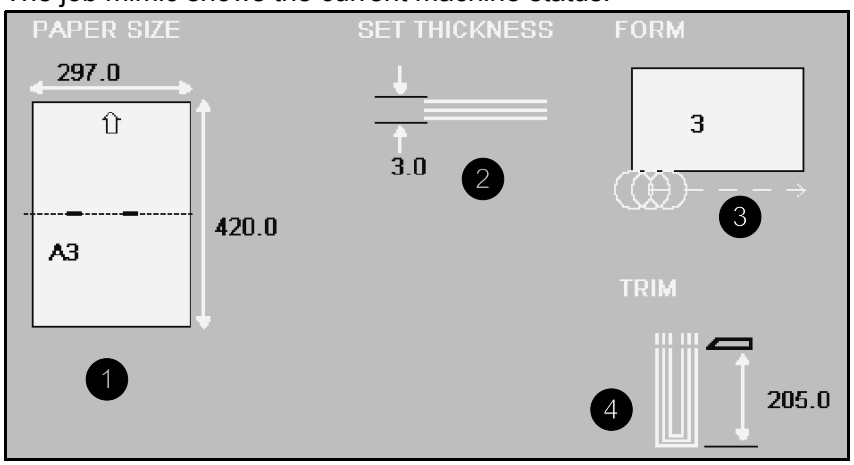
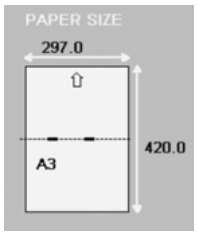
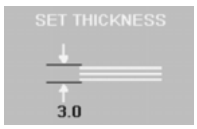
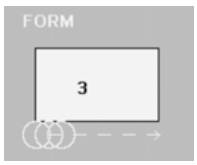



FIGURE 6. The Job Mimic

| No. | Icon | Information |
|---|---|---|
| 1 | Paper Size   | The following items are shown<br>• the size of paper<br>• the format of the paper in the gathering area<br>• the broken line shows the fold line<br>• the small thick lines show the stitches<br>• the arrow shows the original feed edge in the printer |
| 2 | Set Thickness   | The set thickness, in mm, is shown. |
| 3 | Form   | The number of forms is shown.<br>If the pressure is adjusted, the setting is shown in brackets.<br>A red X shows that the form function is not active. |
| 4 | Trim | The trim setting is displayed.<br>A red X shows that the trim function is not active. |

# The BASIC Window

The **BASIC** ⌂ window gives you access to frequently-changed machine settings.

### The BASIC Window Buttons

| Button | Information |
|---|---|
| **PAPER SIZE** | Touch **PAPER SIZE** to enter the paper size.<br>When the machine is in operation, you can adjust the **PAPER SIZE** by a maximum of +/- 1mm. |
| **- PAGE DIRECTION** | Touch **PAGE DIRECTION** to change the direction of the paper to Landscape or Portrait. |
| **- ROTATE** | Touch **ROTATE** to set the sheet rotation **ON** or **OFF**.<br>If you select A4 portrait (USA: 8.5x11), **ROTATE** is set to **ON** automatically. |
| **- PRESETS** | Touch **PRESET** to select a standard paper size. |
| **SET THICKNESS** | Use the **SET THICKNESS** window to define the thickness of the set. |
| **- THICKNESS** | Measure the thickness of the set before you make a book. Touch **THICKNESS** and enter the value. |
| **STITCHES** | Touch **STITCHES** to select the number of stitches. Available options are **1** - **6**. The machine automatically calculates the position of the stitches according to the size of the paper. Select **0** to turn off the stitch function. |
| **FORM** | To make the square spine of the book, pressure is applied to the spine. This process is called forming.<br>Touch **FORM** to specify the amount of spine form.<br>To make a good spine on heavy or coated paper, the amount of spine form can be increased.<br>To increase the amount of spine form<br>• Touch **NUMBER** to repeat the process<br>• Touch **PRESSURE** to increase the pressure |
| **- AUTO** | Touch **AUTO** to select the optimum amount of spine form, according to the set thickness. |
| **- NUMBER** | Touch **NUMBER** to select how many times the form roller processes the spine. The available options are 1, 2, 3 or 4. The form function can be turned off.<br>An increase in **NUMBER** increases the time taken to form the spine and can decrease the production rate for thin books.<br>Alternatively, increase the **PRESSURE**. |

| Button | Information |
|---|---|
| **- PRESSURE** | Touch **PRESSURE** to increase or decrease the pressure used to form the spine.<br>Touch **+** to increase the amount of spine form. Touch **-** to decrease the amount of spine form. The range is -9 to +9. The default setting is 0. |
| **- THRESHOLD** | The square spine is formed only on sets thicker than 0.8mm. To change this value, touch **THRESHOLD** and enter the value you need. The maximum value is 1.5mm. |
| **TRIM** | The trim dimension is calculated automatically according to the **PAPER SIZE** and **SET THICKNESS**.<br>If needed, the trim dimension can be changed. Touch **TRIM** to adjust the size of the finished book after the fore-edge is trimmed. The maximum trim is 28 mm.<br>The trim function can be turned off. |

# The LOAD & SAVE Window

The **LOAD & SAVE** 🗀 window lets you save and reload job settings. Each job is given a name. The jobs are displayed in a list on the screen.

Touch the job name or use the Up arrow or Down arrow to make the selection.

### The LOAD & SAVE Window Buttons

| Button | Information |
|---|---|
| **SAVE** | Touch **SAVE** to save the current settings. An on-screen keyboard is displayed. Enter the job name. Touch **OK** or **CLOSE**. The new job appears in the list of saved jobs. You can reload a saved job to decrease set-up time in the future. |
| **- REPLACE** | If you change the settings of a saved job, touch **REPLACE** to save the new settings. |
| **- CANCEL** | Touch **CANCEL** if you do not need to save a job that you have changed. |
| **- SAVE NEW** | If you change the settings of a saved job, touch **SAVE NEW** to save the new settings as a new job. An on-screen keyboard is displayed. Enter the new job name. Touch **OK** or **CLOSE**. The original job is not changed.<br>If the job name is not changed before **OK** or **CLOSE** is touched, the job will be saved with the current name followed by an asterisk *. |
| **JOB DETAILS** | **JOB DETAILS** shows the settings for each saved job. Select the job that you need to view from the job list. Touch **JOB DETAILS** to see a summary of the job settings. |
| **LOAD** | Touch the job name or use the Up arrow or the Down arrow to make the selection. Touch the **LOAD** button |
| **PADLOCK SYMBOL** | The padlock symbol shows when a saved job is locked or unlocked. There is a small padlock symbol next to each locked job. To lock or unlock a job<br>1. select the job from the job list<br>2. touch the large key symbol.<br>A padlock symbol displayed in light grey shows that a job has been locked by a supervisor to prevent changes to the settings. |
| **DELETE** | To delete a particular job it must be unlocked. Touch the job name or use the Up arrow or Down arrow to make the selection from the job list.<br>Touch and hold **DELETE**. A red line appears. The red line fills from left to right. Hold **DELETE** until the red line reaches the right-hand side. |

| Button | Information |
|---|---|
| **VIEW OF JOB LIST** | **VIEW OF JOB LIST** changes the order that saved jobs are listed.<br>There is a line between Factory Template jobs and jobs saved by the operator. The Factory Template jobs are at the top of the list |
| **- A->Z** | Touch **A->Z** to list the jobs in alphabetical order. |
| **- BY USE** | Touch **BY USE** to list jobs in the order they were last used. The most recently-run job is at the top of the list. |
| **- BY INDEX** | Touch **BY INDEX** to list jobs in numerical order. the machine gives a number to all jobs that are saved. |

# The ADVANCED Window

The **ADVANCED** ⩥ window gives you access to special machine functions.

### The ADVANCED Window Buttons

| Button | Information |
|---|---|
| **RE-REF** | If the machine calibration appears incorrect, touch **RE-REF** to re-reference the adjustment axes. The adjustment axes return to the current settings.<br>At intervals, the machine will re-reference the axes during the set-up procedure. |
| **STITCHER UP** | Touch **STITCHER UP** before you lubricate the stitch head. This action moves the stitch head to the correct position for lubrication. |
| **PURGE SET** | When an error occurs, a set or part of a set can remain in the gathering area. Touch **PURGE SET** to clear the set from the machine. The book is not stitched or trimmed. |
| **- MAKE BOOK** | When an error occurs, a set or part of a set can remain in the gathering area. Touch MAKE BOOK to clear the set from the machine. The book is stitched and trimmed. |
| **FORM** | This button is used by the service engineer. |

# The CONFIGURE Window

The **CONFIGURE** window lets you make changes to the configuration of the machine.

Some of the settings can be changed, depending on the current access level.

### The CONFIGURE Window Buttons

| Button | Information |
|---|---|
| **MACHINE OPTIONS** | Touch **MACHINE OPTIONS** to view the general machine set-up. Some of the settings can be changed, depending on the current access level. |
| **- MEASUREMENT** | Select ‘mm’ or ‘inch’ as the unit of measurement. |
| **- STITCH SENSOR** | There is a sensor that checks for stitches. Touch **STITCH SENSOR** to turn the stitch sensor on or off. The default setting is ON. |
| **- PRESET PAPER SIZES** | The preset paper sizes can be either ISO A sizes or US paper sizes. To select which preset paper sizes are available, touch the relevant button. |
| **NETWORK SETTINGS** | This button is used by the service engineer. |
| **SHUTTLE** | Touch **SHUTTLE** to make adjustment to the tamper and pickup. |
| **- TAMPER DELAY** | The tamper removes air from the set before the set moves to the stitch area.<br>Touch **TAMPER DELAY** to increase or decrease the delay before the tamper is activated. Light weight paper can need more time to stabilise.<br>An increase in **TAMPER DELAY** causes a decrease in the production rate for thin books.<br>The default-setting is 400. |
| **- TAMPER TIME** | **TAMPER TIME** adjusts the time that the tamper touches the set. The default-setting is 600. |
| **FORM** | This button is used by the service engineer. |

# The MENU Window

**MENU** shows the settings that are not changed during day-to-day operation. These settings include

- Change the Access Level
- Change the display language
- Advanced machine settings that are accessed by a person who has the correct access-code.

### The MENU Window Buttons

| Button | Information |
|---|---|
| **ACCESS LEVEL** | The Touch Screen has five different access levels<br>• Operator<br>• Supervisor<br>• Service<br>• Distributor<br>• Factory<br>Touch **ACCESS LEVEL** and select the correct level from the list. The last three levels are protected by access codes.<br>To protect the job settings, the supervisor level allows jobs to be locked. |
| **CURRENT LANGUAGE** | Touch one of the flags to select the language you need. |
| **AXES** | This button is used by the service engineer. |
| **BRIDGE** | This button is used by the service engineer. |
| **SERVICE OPTIONS** | This button is used by the service engineer. |
| **TEST** | This button is used by the service engineer. |

# CHAPTER 4 Standard Tasks

## Introduction

This chapter describes the standard tasks that are needed in the day-to-day operation of your PowerSquare.

## Load and Save the Job Settings

### Introduction

The current job settings can be saved to the memory and reloaded for use again at a later date. Load the 'Default Job Template' to reset the PowerSquare to normal settings.

### Save a job

1. Touch **LOAD & SAVE** 🗀 **> SAVE.**
2. If these options appear, select one.
   **REPLACE** to over-write the previous job with the current job settings.
   **SAVE NEW** to save the current job with a new name.
   **CANCEL** to cancel the job save.
3. Enter the name for the job on the keyboard
4. Touch **OK** or **CLOSE**.

### Load a job

1. Touch **LOAD & SAVE** 🗀.
2. Touch the job name or use the Up arrow and the Down arrow to select the job.
3. Touch **LOAD**.
4. Wait until the PowerSquare has made the adjustments.

### Reset the PowerSquare to default settings

1. Touch **LOAD & SAVE** .
2. Select the **Default Job Template** from the list of jobs.
3. Touch **LOAD**.
4. Touch **YES**.

## Open the Connecting Bridge Cover

### When to do

If a machine error occurs, or for maintenance.

- To clear a paper jam
- To clean the static elimination bar

The PowerSquare will not stop if you open the connecting bridge cover.

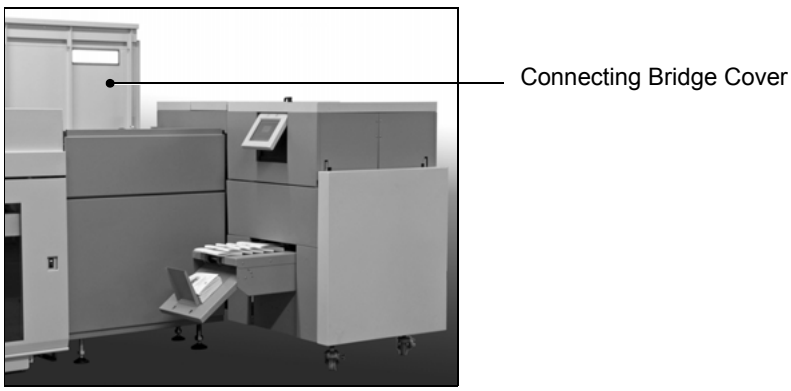



FIGURE 7. Connecting Bridge Cover in the open position.

**WARNING** Keep your hands, clothing and hair away from the belts.

### Procedure

- Lift the connecting bridge cover.

## Open the Folder Cover

### When to do

If a machine error occurs, or for maintenance.

- To access the stitch area
- To access the folder area

**Note**

The folder cover has an interlock switch. The PowerSquare stops if you open the folder cover.

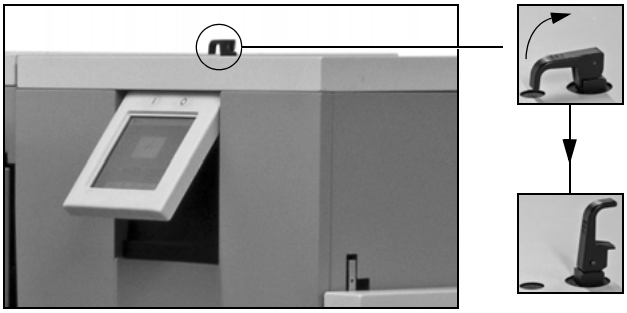


FIGURE 8. Unlock the Folder Cover

**Procedure**

1. Lift the black locking handle against the spring pressure.
2. Turn the handle through 90° to unlock.
3. Lift the folder cover carefully to the vertical.

## Lift and Lower the Clincher Frame

**When to do**

If a machine error occurs, or for maintenance.

- To clear a paper jam in the stitch area
- To unlock the PowerSquare main deck

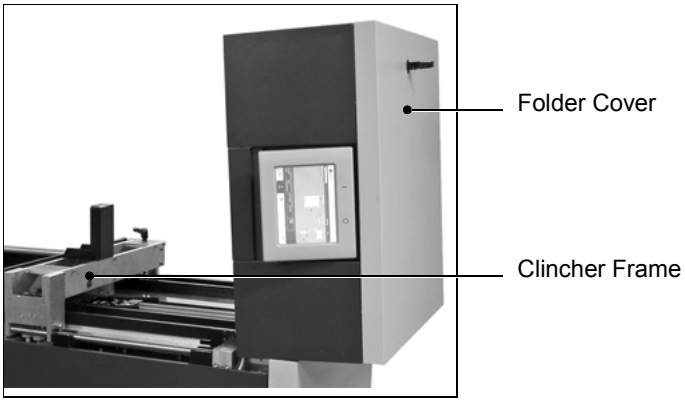



FIGURE 9. Folder Cover in the vertical position.

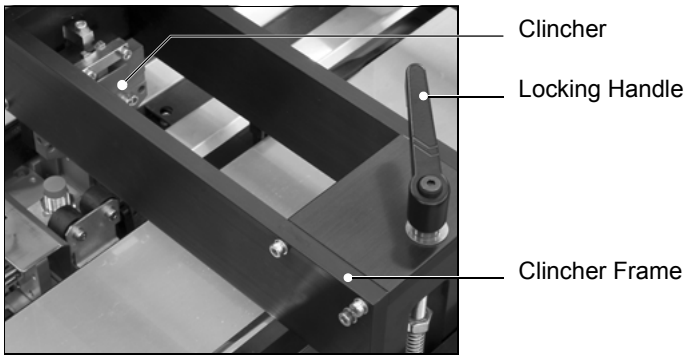



FIGURE 10. Clincher Frame Components

### Lift the Clincher Frame

1. Open the folder cover.
2. Turn the locking handle to the left, until the thread is disengaged.
3. Lift the clincher frame to the vertical position.

### Lower the Clincher Frame

**WARNING** You must hold the weight of the clincher frame. Do not let the clincher frame fall on your hand.

1. Lower the clincher frame.
2. Turn the locking handle to the right, until the handle is tight.

## Open the Gathering Area Cover

### When to do

If a machine error occurs, or for maintenance.

- To access the gathering area
- To access the static elimination bar in the gathering area

The PowerSquare will stop if you open the gathering area cover.

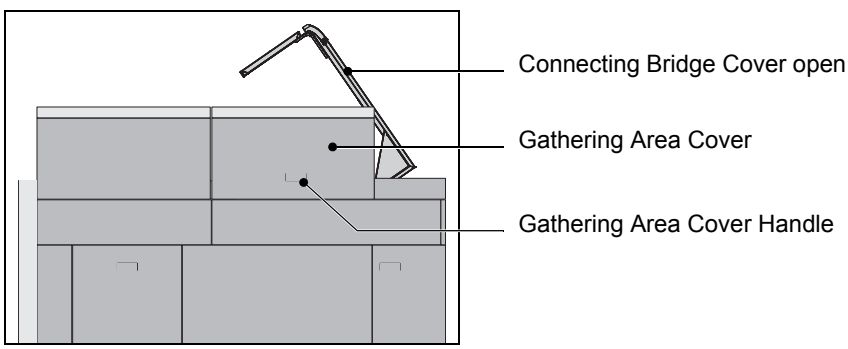



FIGURE 11. Gathering Area Cover

**Procedure**

1. Open the connecting bridge cover.
2. Use the gathering area cover handle to lift the gathering area cover.

## Lift the PowerSquare Main Deck

**When to do**

If a machine error occurs, or for maintenance.

- To access the stitch head
- To access the former area
- To access the trim area

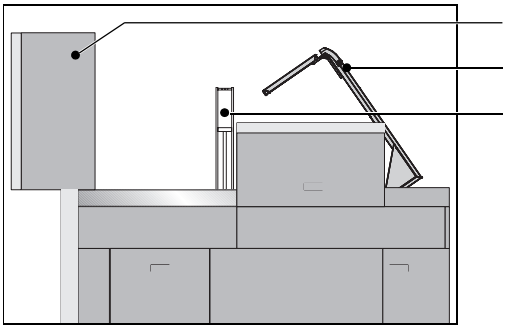



FIGURE 12. Lift the PowerSquare Main Deck

**Procedure**

| Step | Action | Information |
|---|---|---|
| 1 | Open the connecting bridge cover. | See “Open the Connecting Bridge Cover” on page 22 |
| 1 | Open the folder cover. | See “Open the Folder Cover” on page 22. |
| 2 | Lift the clincher frame. | See “Lift the Clincher Frame” on page 24. |
| 3 | Open the gathering area cover. | See “Open the Gathering Area Cover” on page 24. |
| 4 | Lift the PowerSquare main deck. | The main deck lifts to approximately 60°. |

# Empty the Trim Bin

**When to do**

- An error message is displayed on the touch screen when the trim bin is full.
- You can empty the trim bin when you choose. For example, before you start a print job.

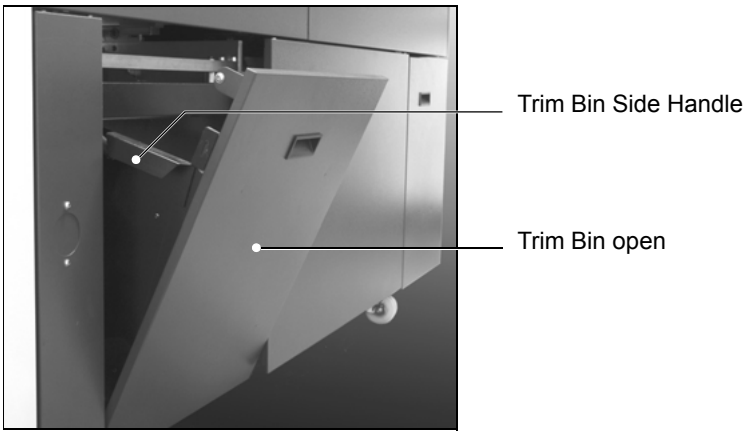



FIGURE 13. Trim Bin Open

**Note**

The PowerSquare operates with the trim bin removed for a short time. The printer waits while the trim bin is removed, then continues when the trim bin is replaced. To prevent lost production, you must remove, empty and return the trim bin to the PowerSquare as quickly as possible.

**Procedure**

1. Use the handle to open the trim bin.
2. Use the side handles to lift and remove the trim bin.
3. Empty the trim bin
4. Fit the bottom of the trim bin over the mounting rail.
5. Push the trim bin closed at the top.

# Open the Stitch-Wire Cabinet

**When to do**

- To see if the stitch-wire is jammed or finished. An error message is displayed on the touch screen when the stitch-wire is jammed or finished.
- To install a new stitch-wire spool. See “Install New Stitch-wire” on page 63.

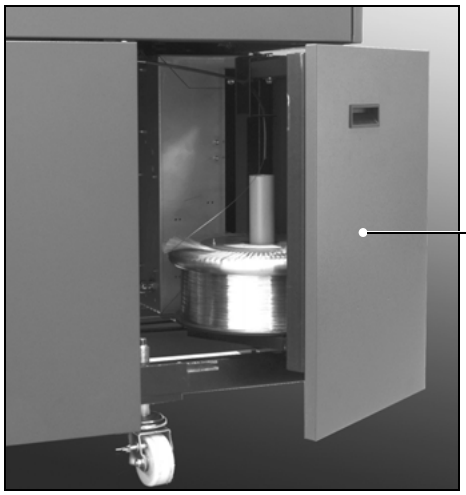



FIGURE 14. Stitch-wire Cabinet

**Procedure**

1. Open the stitch-wire cabinet cover. The cover is held closed by a magnetic catch.

## Adjust the Stacker Collection Table

The collection table must be in the correct position for the stacker to operate. The position of the collection table depends on the finished size of the job.

**When to do**

- When you start a new job
- If the books do not stack correctly

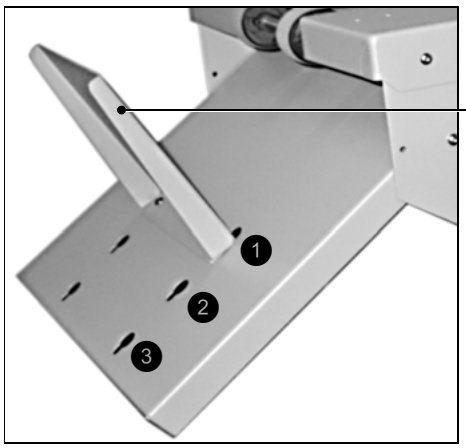



FIGURE 15. Collection Table Positions

### Procedure

1. Insert the collection table into one of the three pairs of slots.

| Finished Book Metric Paper Size | Metric Dimensions | Finished Book US Paper Size | Slot |
|---|---|---|---|
| A6 | 105 x 148 mm | 4¼ x 5½ inches | ❶ |
| up to A5 | 148 x 210 mm | 5½ x 8½ inches | ❷ |
| up to A4 | 210 x 297 mm | 8½ x 11 inches | ❸ |
| up to maximum size | 250 x 340 mm | 9¾ x 13¼ inches | ❸ |

## Adjust the Gate in the Gathering Area

The gate in the gathering area must be in the ‘up’ position for jobs of 1 to 3 sheets and in the ‘down’ position for jobs of more than 3 sheets. If the gate is left ‘down’ for thin jobs, then the sheets of paper can be damaged or jam in the machine.

### When to do

- When you start a new job

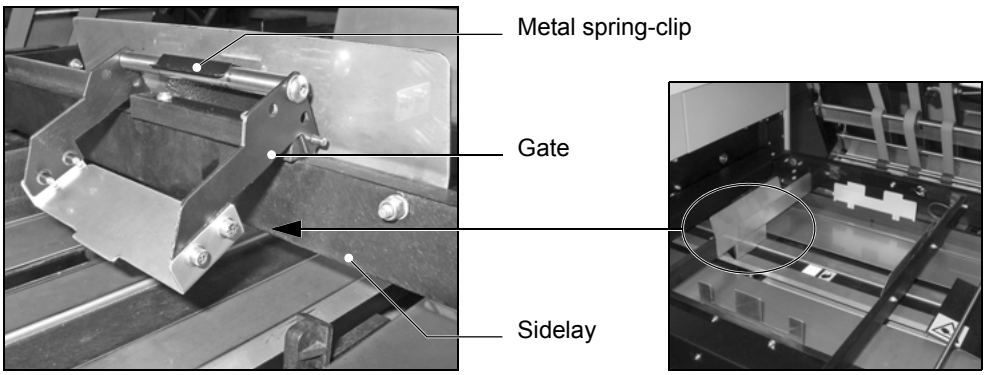



FIGURE 16. Gate in the ‘up’ position

### Lift the Gate in the Gathering Area

1. Open the gathering area cover. See “Open the Gathering Area Cover” on page 24.
2. Lift the gate on the sidelay until the gate engages with the metal spring-clip. See Figure 16 on page 28.
3. Close the gathering area.

### Lower the Gate in the Gathering Area

1. Open the gathering area cover. See “Open the Gathering Area Cover” on page 24.
2. Press on the gate to disengage the gate from the metal spring-clip. See Figure 16 on page 28.
3. Close the gathering area.

## Operate the PowerSquare offline

You can hand feed sets into the PowerSquare if offline operation is needed. The machine operates when you push the two buttons.

### When to do

- To check the settings are correct
- To make a small number of books offline

**WARNING** Do not put your hands in the gathering area when the machine operates. Use two hands to push the buttons. For safety reasons, this task is for a single operator. Do not let another person help you.

### Procedure

1. Enter the correct settings on the touch screen, according to the size and thickness of the job.
2. Touch START .
3. Open the connecting bridge cover.
4. Open the gathering area cover.
5. Put the set in the gathering area with the middle pages of the book face up.
6. Press the two orange buttons and hold for 9 seconds, or until you hear the folder operate. The time interval changes according to the number of stitches.

# CHAPTER 5 Error Conditions, Problems and Solutions

This chapter describes how to correct problems that can occur on your PowerSquare. If a problem continues, contact your Watkiss service engineer.

## Printer Error

If a paper jam or other error occurs in the printer, the printer and the PowerSquare stop.

**Procedure**

1. Clear the printer error.
2. Follow the instructions on the printer.
   If the printer tells you to remove paper from the PowerSquare, then touch **ADVANCED > PURGE SET > PURGE SET**. The partial book is delivered to the stacker. Discard the book.

## PowerSquare Error

If a paper jam or other error occurs in the PowerSquare, the printer and the PowerSquare stop. The type of PowerSquare error is displayed on the touch screen. See “Message List” on page 33.

**Procedure**

1. Clear the PowerSquare error. The error message on the touch screen tells you about the error.
2. Remove all sheets from the PowerSquare.
3. Follow the instructions on the printer.

# General Problems

| Problem | Cause | Solution |
|---|---|---|
| The PowerSquare does not start | The PowerSquare is not turned on. | Turn ON the PowerSquare. See “Turn On the PowerSquare” on page 6. |
| | The printer has not sent a job to the PowerSquare. | Correct the problem at the printer. |
| | The PowerSquare is not connected to the mains power supply. | Connect to the mains power supply of the correct type and voltage. See “Turn On the PowerSquare” on page 6. |
| | A safety cover is open. | Close all safety covers. |
| | The trim bin is not fitted or the trim bin is not fitted correctly. | Fit the trim bin. |
| | The PowerSquare is not connected to the printer interface. | Check the interface cables. Connect the cables. |
| | A fuse has blown on the mains power input. | Replace the fuse(s) as needed. See “Change the Fuses” on page 51. |
| | The stitch head is jammed. | Clear the stitch head jam and start the PowerSquare again. See “Clear a Stitch Head Jam” on page 49. |
| | An error condition exists on the PowerSquare. | Check the error message on the Touch Screen. Correct the fault. See “Message List” on page 33. |
| The operation of the touch screen is incorrect | The touch screen calibration is incorrect | Calibrate the touch screen. See “Calibrate the Touch Screen” on page 51. |

# Message List

| Message | Information | Reference |
|---|---|---|
| AXES MOVING | Some of the machine axes are moving. This message clears when the adjustment is complete. | |
| BOOK CYCLE TIME TOO LONG | The printer has delivered the sets faster than the books can be made.<br>To decrease the book cycle time, adjust the machine settings:<br>• decrease the number of FORMS<br>• decrease the number of STITCHES<br>• decrease the TAMPER TIME | |
| Bridge axis moving | The bridge axis is moving. This message clears when the adjustment is complete. | |
| BRIDGE INFEED COVER OPEN | The bridge infeed cover is open. The machine will not operate until the cover is closed. | See page 41. |
| BRIDGE MOTOR STALL | Check for a paper jam in the connecting bridge. Clear the jam and continue. | See page 41. |
| CHECK THE TRIM BIN | The trim bin is either open or full. Check the trim bin. Empty the trim bin if necessary. | |
| COVER OPEN | A safety cover is open. The machine will not operate until the cover is closed. | |
| DRIVE MOTOR STALL | There is a paper jam. Check the machine and correct the error. | |
| Endlay axis moving | The endlay axis (size adjustment) is moving. This message clears when the adjustment is complete. | |
| ERROR IN TRIM AREA | There is an error at the trimmer. Check the machine for a paper or book jam. | |
| FLOW ERROR - BRIDGE | There is an error at the connecting bridge. Open the connecting bridge cover and check for a paper jam. | See page 41. |

| Message | Information | Reference |
|---|---|---|
| FLOW ERROR - FORMER | There is an error at the former. Open the folder cover and remove the book or books. If necessary, open the main deck to remove the book or books. | See page 43. |
| FLOW ERROR - OUTFEED | There is an error at the outfeed. Check the outfeed. If necessary, remove the trim bin and open the trim stop guard to remove the book or books. | See page 45. |
| Fold blade axis moving | The fold blade axis (book thickness adjustment) is moving. This message clears when the adjustment is complete. | |
| FOLD BLADE NOT PARKED | The fold blade is in the wrong position. Touch START to reset the position. | |
| FORM CLAMP CLOSED | The form clamp is in the wrong position. Touch START to reset the position. | |
| FORM ROLLER ERROR | The form roller is jammed. Clear the jam and continue. | See page 45. |
| FORM ROLLER NOT PARKED | The form roller is in the wrong position. Touch START to reset the position. | |
| GATHERING AREA COVER OPEN | Close the gathering area cover if you need to operate the machine online. | |
| JAM AT BRIDGE INFEED | There is a paper jam at the infeed to the connecting bridge. Clear the jam and continue. | See page 41. |
| JAM AT FORM ROLLER | The form roller is jammed. Open the folder cover and remove the jam. | See page 45. |
| JAM BEFORE TRIMMER | There is a book jammed before the trimmer. Clear the jam and continue. | See page 44. |
| JAM IN CONNECTING BRIDGE | There is a paper jam in the connecting bridge. Clear the jam and continue. | See page 41. |

| Message | Information | Reference |
|---|---|---|
| JAM IN GATHERING AREA | There is a paper jam in the gathering area. Open the connecting bridge cover, lift the connecting bridge and remove the paper jam. | See page 41. |
| JAM IN STACKER AREA | There is a paper jam at the outfeed of the machine. Remove the jammed books and continue. | |
| JAM IN STITCHER AREA | There is a paper jam in the stitch area. Open the folder cover, remove the paper jam and continue. | See page 43. |
| JAM IN TRIMMER | There is a book jammed in the trimmer. Clear the jam and continue. | See page 45. |
| MANUALLY PARK SHUTTLE | The shuttle is not parked correctly. Open the folder cover and move the shuttle to the park position. Close the folder cover. The shuttle will reset. When the message list is clear, continue operation. | See page 52. |
| MISSING STITCHES | The machine has detected missed stitches. Check if the stitch-wire is jammed or if the stitch-wire spool is empty. | See page 46. See page 63. |
| MOTOR OVERLOAD | The drive motor controller has reached its power limit. Check for a paper jam and clear if necessary. If the problem continues, contact your Watkiss service engineer. | |
| REMOVE SET FROM FOLD AREA | Open the folder cover and remove the set. | |
| REMOVE SET - GATHERING AREA | Open the gathering area and remove the sheets. Or touch 'PURGE SET'. | |
| Rotate axis moving | The rotate axis is moving. This message clears when the adjustment is complete. | |
| Shuttle axis moving | The shuttle axis is moving. This message clears when the adjustment is complete. | |

| Message | Information | Reference |
|---|---|---|
| SHUTTLE MOTOR COMMS FAIL | Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your Watkiss service engineer. | |
| SHUTTLE MOTOR ERROR | Use the mains ON/OFF switch. Turn the machine OFF, then turn the machine ON. If the problem continues, then call your Watkiss service engineer. | |
| SHUTTLE NOT PARKED | The shuttle is in the wrong position. Touch START ⏻ to reset the position. | |
| Sidelay axis moving | The sidelay axis (size adjustment) is adjusting. This message clears when the adjustment is complete. | |
| STACKER FULL | The stacker is full. Unload the books from the stacker. | |
| Stitch axis moving | The stitch axis is moving. This message clears when the adjustment is complete. | |
| Stitch position adjusting | The stitch position is adjusting. This message clears when the adjustment is complete. | |
| STITCH TIMEOUT | There is an internal error. If the problem continues, then call your Watkiss service engineer. | |
| TOO MANY PAGES | The printer has delivered more than 55 sheets into the gathering area. Remove the incorrect set. Correct the printer setting. | See . |
| TOUCH PAD ERROR | There is a fault with the START and STOP touch pads. If the problem continues, then call your Watkiss service engineer. | |
| Touch START to clear machine | There may be some paper in the machine. Touch START ⏻ to clear the machine before you start a new job. | |
| Trim axis moving | The trim axis (size adjustment) is moving. This message clears when the adjustment is complete. | |

| Message | Information | Reference |
|---|---|---|
| TRIM BIN OPEN | The trim bin is not fitted or is not contacting the safety switch. Fit the trim bin. | |
| TRIM BLADE NOT PARKED | The trim blade is in the wrong position. Touch START ⏻ to reset the position. | |
| USER STOP | The user has touched the STOP button while the machine is in operation. Touch START ⏻ to restart the machine. | |

# Book Quality

### Paper Size and Book Quality Instructions

- Careful measurement of the paper size and set thickness is important.
- To make an accurate book you must enter accurate paper dimensions into the touch screen.
- Measure the size of the printed paper. The paper dimension changes when the paper is printed.
- If the book is made from several different types of paper, make sure the different paper types are all the same size. If the size of the paper is different, an accurate book cannot be made.
- Adjustments to the **FORM** settings can be necessary for some types of paper.

### Machine Adjustments

Machine adjustments can be made while the machine is in operation.

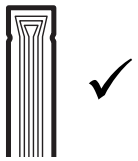
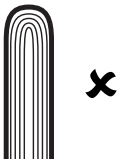
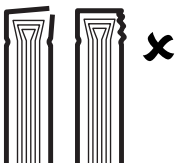
The **PAPER SIZE** adjustment is limited to a maximum of +/- 1mm when the machine is in operation.

## Book Quality Problems

| Book Quality Problem | Cause | Solution |
|---|---|---|
| The finished book is not tidy | The wrong paper size was entered on the touch screen. | Measure the paper and enter the correct dimensions. See “Enter the Job Settings” on page 6. |
| | The book is made from paper that is different sizes. | Only use paper of the same size. See “Paper Size and Book Quality Instructions” on page 37. |
| | The PowerSquare adjustment system is not calibrated correctly. | Touch **RE-REF** in the **PAPER SIZE** window to calibrate the PowerSquare adjustment axes. See “RE-REF” on page 18. |
| | The static elimination bars are dirty. | Clean the static elimination bars. See “Clean the Static Elimination Bars” on page 56. |
| | Incorrect function of the static elimination bars. | Call your Watkiss service engineer. |
| The spine is not formed correctly | The **SET THICKNESS** is incorrect. | Measure the set thickness and enter the correct dimension. See “Enter the Job Settings” on page 6. |
| | The settings for **FORM** or **PRESSURE** are incorrect. | See “Spine Form Problems” on page 40. |
| The square spine is not formed | The **SET THICKNESS** is less than the spine form **THRESHOLD**. | Decrease the **THRESHOLD** value. See “THRESHOLD” on page 16. |
| | The **FORM** function is turned off. | Turn on the **FORM** function. See “FORM” on page 15. |
| The finished book is not tight | The spine needs more form. | Increase the pressure on the spine. See “PRESSURE” on page 16. |
| | | Increase the amount of spine form. See “FORM” on page 15. |
| The book is not trimmed | The **TRIM** function is not selected. | Turn on the **TRIM** function. See “TRIM” on page 16. |
| | The trim position is set larger than the book. | Reset the trim position. See “TRIM” on page 16. |
| The book is not trimmed square | Trimmed paper has collected on the trim stop. | Clear the trimmed paper from the trim stop. See “Jam in the Trim Area” on page 45. |

| Book Quality Problem | Cause | Solution |
|---|---|---|
| The trimmed edge is of bad quality | The trimmer blade is blunt or damaged. | Call your Watkiss service engineer. |
| The stitch is not on the centre-line of the spine | The wrong paper size was entered on the touch screen. | Measure the paper and enter the correct dimensions. |
| | The PowerSquare adjustment system is not calibrated correctly. | Touch **RE-REF** in the **PAPER SIZE** window to calibrate the PowerSquare adjustment axes. See “RE-REF” on page 18. |
| The books do not stack on the stacker | The collection table is in the wrong position. | Adjust the position of the collection table to fit the size of the finished book. See “Adjust the Stacker Collection Table” on page 27. |
| The book cover is dirty or marked | The former roller is dirty. | Clean the former roller. See “Clean the Former Roller” on page 58 |
| | The former clamp is dirty. | See “Clean the the Polyurethane Strips in the Form Clamp” on page 59. |

## Spine Form Problems

| Spine Form | Condition | Solution |
|---|---|---|
|  | Correct<br>The spine is square at each end and the paper is not damaged. | The PowerSquare setting is correct. Adjustment is not needed. |
|  | Incorrect<br>The spine needs more form. | |
| | If the spine needs more form at one end | Change **NUMBER** to 2 or 4. See “FORM” on page 15. |
| | If the spine needs more form at each end | Increase **NUMBER** or increase **PRESSURE**. See “FORM” on page 15. |
|  | Incorrect<br>The spine is damaged or there are creases near the spine. | Decrease **NUMBER** or decrease **PRESSURE** See “FORM” on page 15. |

# Paper Jams

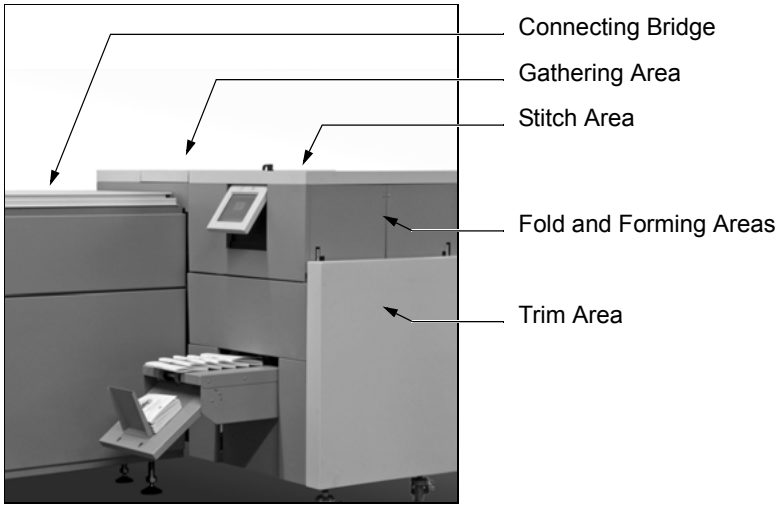



FIGURE 17. Paper Jam Locations

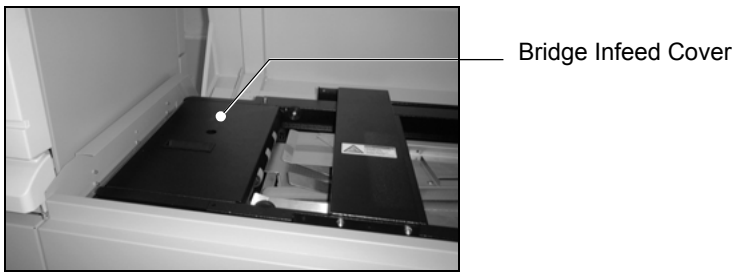



FIGURE 18. Paper Jam Location - Bridge Infeed

### Jam in the Bridge Infeed

1. Open the bridge infeed cover
2. Remove the jammed paper.
3. Close the bridge infeed cover.
4. If there is paper in the gathering area, touch **PURGE SET.** This action clears paper from the PowerSquare.
5. Continue the print job.

### Jam in the Connecting Bridge

1. Open the connecting bridge cover.
2. Remove the jammed paper. Do not damage or move the belts.
3. Close the connecting bridge cover.
4. If there is paper in the gathering area, touch **PURGE SET.** This action clears paper from the PowerSquare.
5. Continue the print job.

### Jam in the Gathering Area

1. Open the connecting bridge cover.
2. Lift the gathering area cover.

3. Remove the jammed paper.
4. Check the belts are in the correct position. Adjust the position of the belts if necessary. See Figure 19.
5. Close the gathering area cover.
6. Close the connecting bridge cover.
7. Continue the print job.

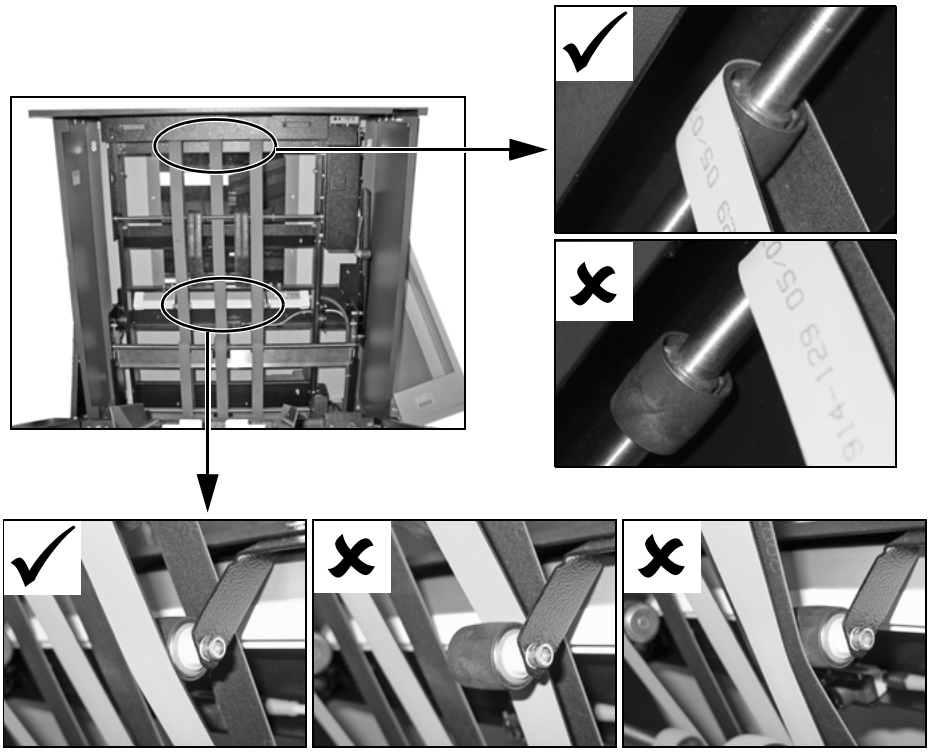
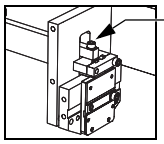


FIGURE 19. Gathering Area Belt Positions

### Jam in the Stitch Area

| Step | Action | Information |
|---|---|---|
| 1 | Open the folder cover. | See “Open the Folder Cover” on page 22. |
| 2 | Lift the clincher frame. | See “Lift and Lower the Clincher Frame” on page 23. |
| 3 | Remove the jammed paper. | |
| 4 | Check for broken or damaged stitches in the clincher area. Manually operate the clincher to clear any stitches that are jammed. |  Press to manually operate the clincher. |
| 5 | Lower the clincher frame. | See “Lift and Lower the Clincher Frame” on page 23. |
| 6 | Close the folder cover. | |
| 7 | If there is paper in the gathering area, touch **PURGE SET**. | This action clears paper from the PowerSquare. |
| 8 | Continue the print job. | |

### Jam in the Folder or Former Area

1. Open the folder cover.
2. Remove the jammed paper.
   If you cannot see the paper in the former area, see “Jam in the Trim Area” on page 45
3. Close the folder cover.
4. If there is paper in the gathering area, touch **PURGE SET.** This action clears paper from the PowerSquare.
5. Continue the print job.

## Jam before the Trimmer

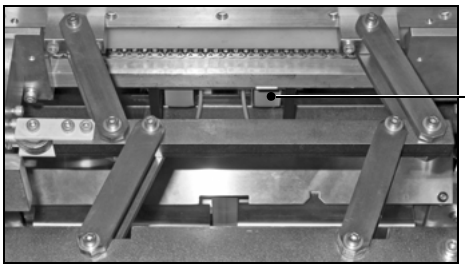
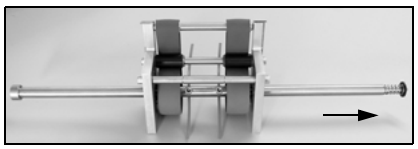



FIGURE 20. Trimmer Infeed Conveyor viewed from above.

| Step | Action | Information |
|---|---|---|
| 1 | Open the PowerSquare main deck. | |
| 2 | Remove the trim bin. | |
| 3 | Remove the trimmer infeed conveyor. | The procedure can be seen from the top of the machine.<br>Access to the parts is through the trim bin opening.<br>Hold the shaft and push to the right, against the spring pressure. Lift the left hand end clear.<br>  |
| 4 | Remove the book. | |
| 5 | Remove any paper offcuts from the trimmer infeed conveyor. | A small piece of paper can cover the jam sensor and generate an error message. |
| 6 | Fit the trimmer infeed conveyor. | Insert the right hand end of the shaft into the bearing, against the spring pressure. Insert the left hand end. |
| 7 | Fit the trim bin. | |
| 8 | Close the PowerSquare main deck and covers. | |
| 9 | If there is paper in the gathering area, touch **PURGE SET**. | This action clears paper from the PowerSquare. |
| 10 | Continue the print job. | |

## Jam in the Trim Area

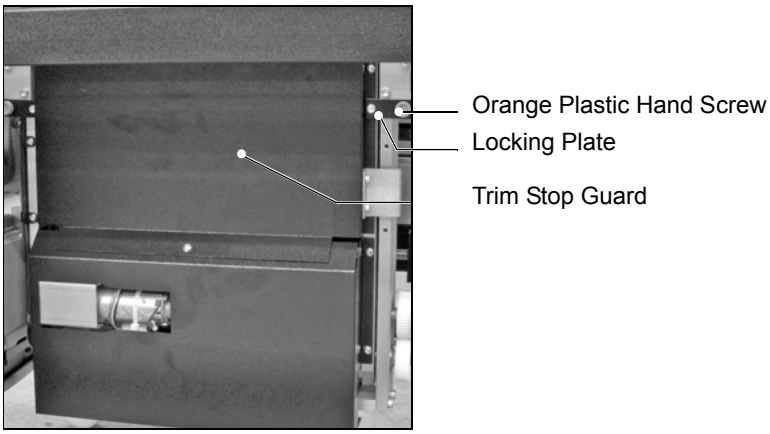



FIGURE 21. Trim Stop Assembly

| Step | Action | Information |
|---|---|---|
| 1 | Remove the trim bin. | |
| 2 | Loosen the 2 orange plastic hand screws to release the locking plates. | The locking plates can rotate to release the trim stop guard. |
| 3 | Pull the trim stop guard towards you. | |
| 4 | Remove the jammed book. | Check the trim stop and remove any pieces of trimmed paper. |
| 5 | Push the trim stop guard into position. | |
| 6 | Hold the locking plates in position and tighten the orange hand screws. | |
| 7 | Attach the trim bin. | |
| 8 | Touch **PURGE SET**. | This action clears any other paper from the PowerSquare. |
| 9 | Continue the print job. | |

## Stitch Head Problems

| Problem | Cause | Solution |
|---|---|---|
| The stitch head does not operate | The **STITCH** function is not selected. | Make sure **STITCH** is set to **1** or more.<br>See “STITCHES” on page 15. |
| | The stitch-wire is finished. | Load a new spool of stitch-wire. See “Install New Stitch-wire” on page 63. |
| | The stitch-wire is jammed. | Clear the jammed stitch-wire. See “Clear a Stitch-wire Jam” on page 46. |
| The stitches are broken | There is stitch-wire jammed in the stitch head. | Inspect and remove the jammed stitch-wire. See “Clear a Stitch-wire Jam” on page 46. |
| The stitch-wire is jammed on the spool | The stitch-wire spool is not installed correctly. | Check and correct.<br>See “Fit a New Stitch-wire Spool” on page 65.. |

## Clear a Stitch-wire Jam

**Before You Begin**

Lift the PowerSquare main deck.  See “Lift the PowerSquare Main Deck” on page 25.

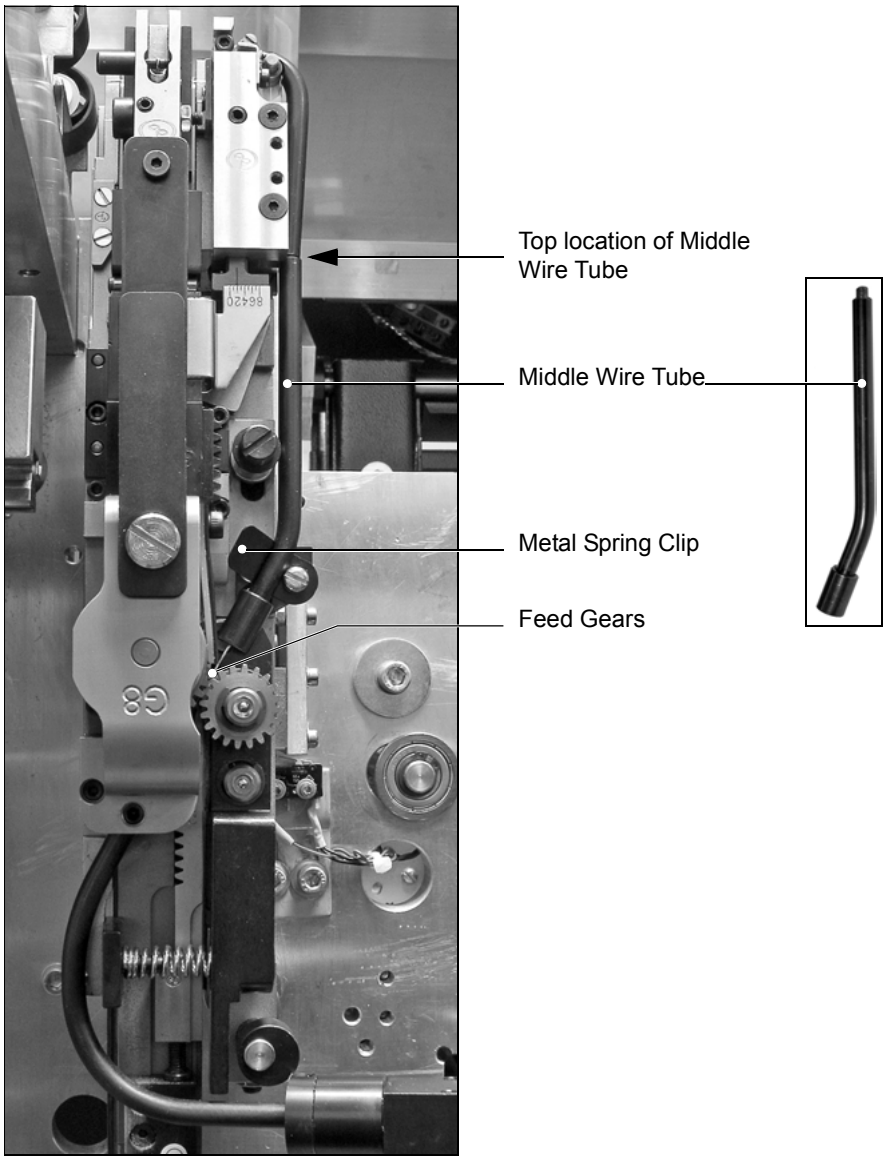
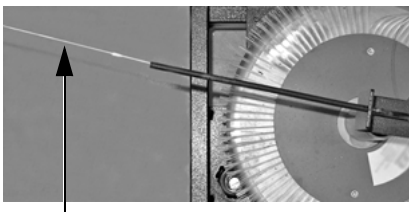
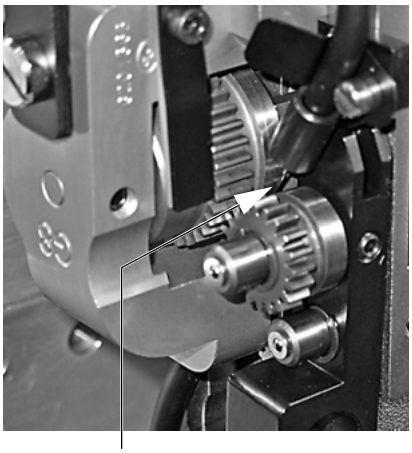
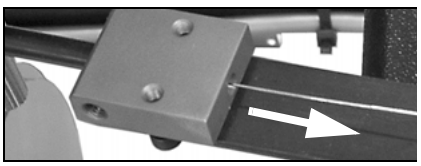



FIGURE 22. Stitch Head

### Clear the Jammed Wire

| Step | Action | Information |
|---|---|---|
| 1 | Cut the stitch-wire at position ‘A’, approximately 50mm (2-inches) from where the stitch-wire leaves the stitch-wire guide. |  <br>‘A’. Cut stitch-wire here. |
| 2 | Cut the stitch-wire at position ‘B’, between the feed gears and the middle wire tube. |  <br>‘B’. Cut stitch-wire here. |
| 3 | Pull the stitch-wire from the stitch-wire guide block. |  <br>Pull stitch-wire in direction of arrow |
| 4 | Pull the stitch-wire from the middle wire tube. | See Figure 22 on page 47.<br>If there is not enough stitch-wire left to pull, then follow the procedure “Remove the Stitch-wire from the Stitch Head” on page 64. |
| 5 | Install the stitch-wire into the stitch head. | See “Install the Stitch-wire into the Stitch Head” on page 65. |

# Clear a Stitch Head Jam

**Problem:** *A loud and repeated banging noise from the fold area of the PowerSquare or the PowerSquare will not start.*

**Action:** *Press the stop button ⊙. The banging noise does not indicate damage has occurred, but can cause alarm. Follow the procedure below.*

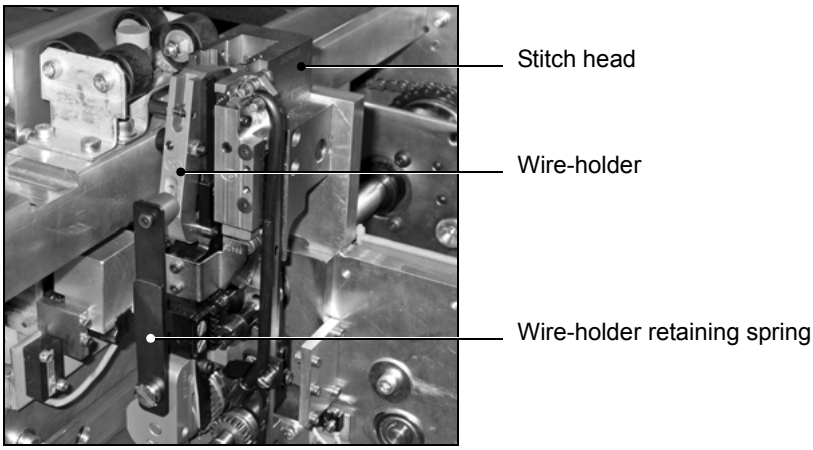



FIGURE 23. Remove the stitch head wire-holder

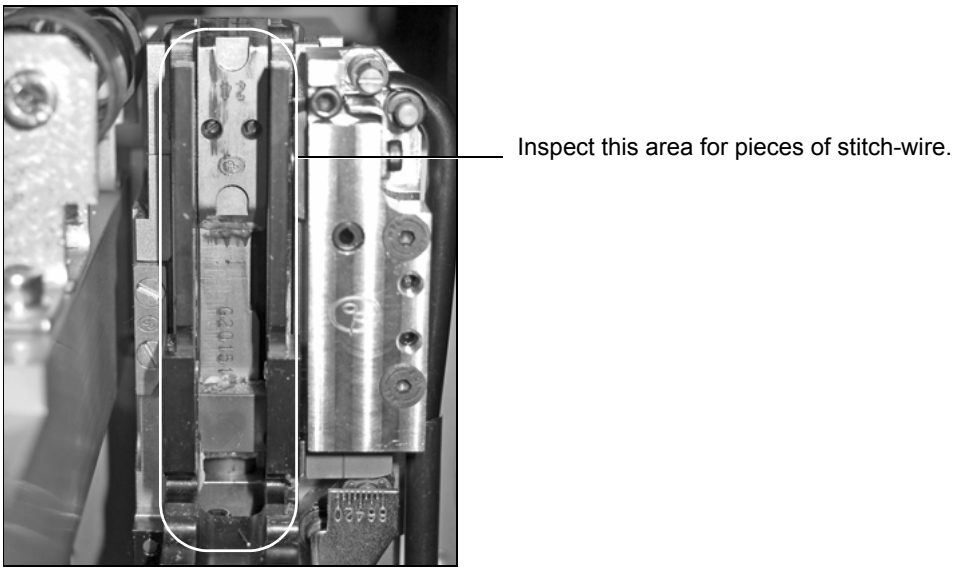
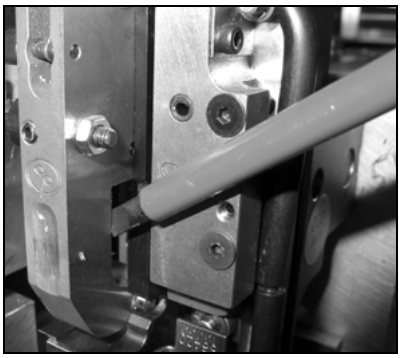



FIGURE 24. Inspect for stitch-wire

**Tools and Materials:**

- Klüber Isoflex NBU15 Grease, 50g. Part number 951-095
- Air duster. Supplied with the machine.
- Wire cutters. Supplied with the machine.
- Flat blade screwdriver

| Step | Action | Information |
|---|---|---|
| 1 | Lift the PowerSquare main deck. | See “Lift the PowerSquare Main Deck” on page 25. |
| 2 | Remove the wire-holder from the stitch head. | • Move the wire-holder retaining spring to the right. See Figure 23 on page 49.<br>• Remove the wire-holder.<br>If the wire-holder is held in position, use a screw driver to help the removal of the wire-holder from the stitch head.<br>  |
| 3 | Inspect the area behind the wire-holder for pieces of stitch-wire. | See Figure 24 on page 49. |
| 4 | Remove any stitches or pieces of stitch-wire and clean the area with the air-duster. | Use the wire-cutters to remove any jammed stitches or pieces of stitch-wire. |
| 5 | Lubricate the stitch-head. | See “Lubricate the Stitch Head” on page 60. |
| 6 | Fit the wire-holder. | Remember to put the wire-holder retaining spring in position. |
| 7 | Close the PowerSquare. | |
| 8 | Start the PowerSquare. | If the head operates normally and returns to the parked position, then further action is not needed.<br>If the stitch head remains jammed, then repeat the procedure one time.<br>If the problem continues, then contact your Watkiss service engineer. |

## Calibrate the Touch Screen

### When to do

Calibrate the touch screen if the buttons do not operate or the buttons do not operate correctly

**CAUTION** Use a pencil, the blunt end of a pen or a palm top wand for this procedure. Do not use a sharp object. Sharp objects damage the screen.

### Procedure

1. Touch the STOP button ⊙ 5 times.
2. Follow the instructions on the touch screen.
3. Touch **DONE** in the centre of the screen.

## Change the Fuses

### Introduction

The PowerSquare has two fuses at the mains power input. If either fuse is broken, the PowerSquare will not operate.

**WARNING** Turn OFF the machine and remove the mains power supply cable before you change the fuses. This machine uses two fuses in parallel.

### Fuse Description

- 7A, HRC Quick acting, F
- Part Number 730-018

### Procedure

1. Turn OFF the PowerSquare.
2. Disconnect the PowerSquare from the mains power supply.
3. Turn one fuse-holder to the left and remove the fuse-holder from the PowerSquare
4. Check the fuse.
5. If the fuse is broken then replace with a fuse of the correct specification.
6. Repeat the procedure for the other fuse.

### Result

If the fuse breaks again, then call your Watkiss service engineer.

# Manually park the Shuttle

### When to do

The error messages '**MANUALLY PARK SHUTTLE**' and '**SHUTTLE NOT PARKED**' are displayed.

### Illustrations

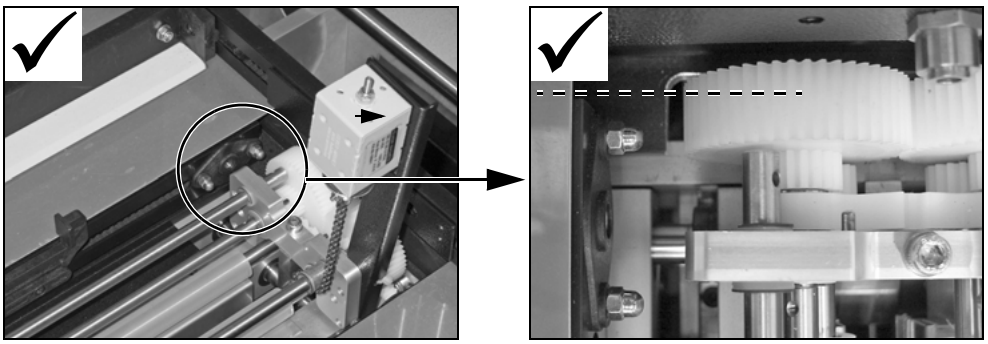


FIGURE 25. Shuttle Assembly Position - CORRECT

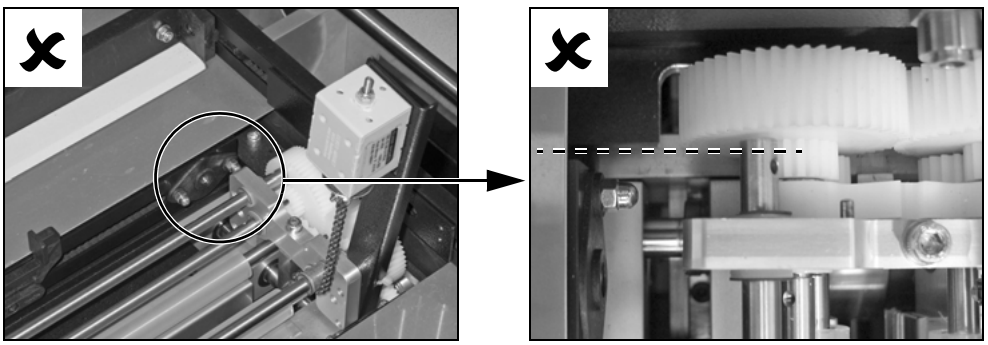


FIGURE 26. Shuttle Assembly Position - NOT CORRECT

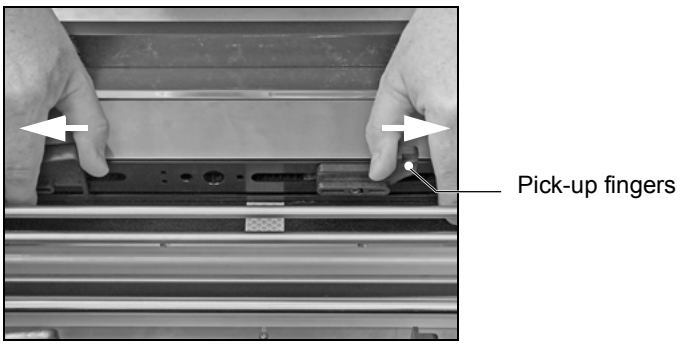



FIGURE 27. Pick-up fingers

### Procedure

| Step | Action | Information |
|---|---|---|
| 1 | Open the folder cover. | See “Open the Folder Cover” on page 22. |
| 2 | Push the shuttle-assembly to the right. | Figure 25 on page 52 shows the correct position for the shuttle assembly.<br>If the shuttle assembly does not move to the correct position, push the pick-up fingers away from each other by 2-3mm and try again. Repeat if necessary. |
| 3 | Wait until the error message ‘SHUTTLE NOT PARKED’ is cleared from the screen. | If the message does not clear, check that the shuttle assembly is in the correct position. Repeat Step 2 if necessary. |
| 4 | Close the folder cover. | |

### Result

The error message ‘**MANUALLY PARK SHUTTLE**’ is cleared from the screen. The shuttle axis re-references and the message ‘Shuttle axis moving’ is displayed.

When the message list is clear, you can continue operation.

# CHAPTER 6 Maintenance

## Service Interval

- The PowerSquare needs service every four months.
- After every one-million stitches, the stitch head needs service. This interval is every 3rd spool of stitch-wire.

Only a Watkiss service engineer can service the PowerSquare. Contact your supplier for further information.

## Operator Maintenance

Correct maintenance by the operator makes sure that

- The machine operates correctly
- The machine makes high quality books
- The machine is safe to use
- Small problems can be identified early

### Operator Maintenance Plan

| Interval | Task | Reference |
|---|---|---|
| • Every week | Clean the machine. | See page 56 |
| | Clean the static elimination bars. | See page 56 |
| • Every month, or<br>• When a new stitch-wire is installed if this interval is shorter. | Lubricate the stitch head. | See page 60 |

## Clean the PowerSquare

### Introduction

Clean the PowerSquare every week to remove surface dust.

**CAUTION** Only clean the machine with materials that are recommended in this manual. Do not use other chemicals or abrasive material.

### Outside of the PowerSquare

Use a moist cloth to clean the outside of the PowerSquare.

### Touch screen

Clean the touch screen with a clean, dry cloth. Never use an abrasive material or chemical to clean the touch screen. Light pressure with a clean, dry cloth is enough to remove fingerprints. Do not use too much force.

## Clean the Static Elimination Bars

### Introduction

Clean the static elimination bars every week. This action extends the performance and service life of the static elimination bars.

The PowerSquare is supplied with a small brush. Use the brush to clean the static elimination bars.

There are three static elimination bars.

- one in the connecting bridge
- two in the gathering area

## Illustration

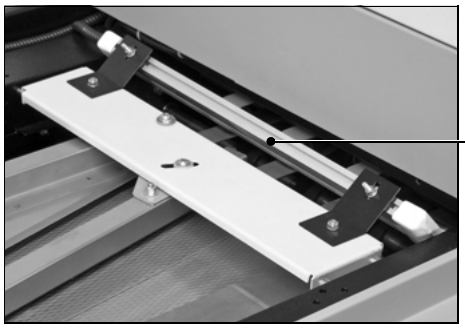



FIGURE 28. The Static Elimination Bar in the Connecting Bridge

FIGURE 29. The Static Elimination Bars in the Gathering Area

## Note

On the bottom of the static elimination bar there is a row of sharp pins. The pins are not dangerous, but if you touch the pins accidentally, this action can alarm you.

### Procedure

| Step | Action | Information |
|---|---|---|
| 1 | Clean the static elimination bar in the connecting bridge. | • Open the connecting bridge cover.<br>• Clean the pins on the bottom of the static elimination bar with a small brush. |
| 2 | Clean the static elimination bar in the gathering area. | • Open the gathering area cover.<br>• Clean the pins on the bottom of the static elimination bar with a small brush. |
| 3 | Close the PowerSquare | • Close the gathering area cover.<br>• Close the connecting bridge cover. |

## Clean the Former Roller

### When to do

Clean the former roller if the spines of the books are dirty. Ink and toner can collect on the former roller.

### Materials needed

Clean, plain paper that is not printed. A3 size (USA: 11 x 17”) is recommended. 4mm thickness is needed for each cycle. More than one cycle can be needed.

### Procedure

| Step | Action | Information |
|---|---|---|
| 1 | Enter the correct settings on the touch screen. | • Set the touch screen to the correct **PAPER SIZE.**<br>• Set the **SET THICKNESS** to **4.0**.<br>• Set the number of **STITCHES** to **0**.<br>• Set the number of **FORMS** to **4**. |
| 2 | Touch START | |
| 3 | Open the connecting bridge cover. | |
| 4 | Lift the gathering area cover. | |
| 5 | Put 4mm of clean paper in the gathering area. | |
| 6 | Press the two orange buttons and hold for 9 seconds, or until you hear the folder operate. | |

### Check

The book is delivered to the stacker. Check the book. Repeat the procedure until the book spine is clean.

## Clean the the Polyurethane Strips in the Form Clamp

### When to do

Follow this procedure if there are dirty marks near the spine on the front and back cover of the book. Ink and toner can collect on these parts, especially when you make thin books.

### Materials description

- Alcohol wipe
  Part number 951-710
- or a lint free cloth and alcohol (isopropanol)

**CAUTION** Only use alcohol to clean this part of the machine. Other chemicals can damage the machine.

### Note

If you push the eject rollers, the rollers can move together against your hand. This movement can alarm you, but is not dangerous.

### Illustration

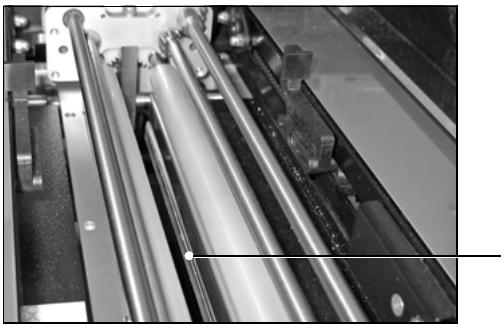



FIGURE 30. Polyurethane strips

### Procedure

| Step | Action | Information |
|---|---|---|
| 1 | Open the folder cover | |
| 2 | Use an alcohol wipe, or apply a small amount of alcohol to a lint free cloth. | |
| 3 | Reach into the form clamp and clean each of the polyurethane strips. | There is a polyurethane strip on the face of each side of the clamp.<br>Repeat this step until the poly-urethane strips are clean. |
| 4 | Close the folder cover | |

## Lubricate the Stitch Head

### When to do

Every month, or when a new stitch-wire is installed if this interval is shorter.

### Materials description

- Klüber Isoflex NBU15 Grease, 50g
  Part number 951-095
- Air duster
  Part number 952-436

**CAUTION**

- Only use the grease shown in this manual. Correct lubrication extends the performance and service life of the stitch head. Other types of grease do not protect the stitch head.
- Only apply the grease as shown. If you apply additional grease, the paper gets marked.

## Illustrations

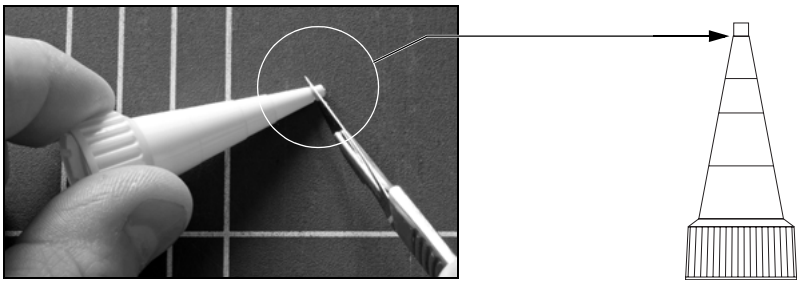


FIGURE 31. Trim the nozzle of the tube of grease

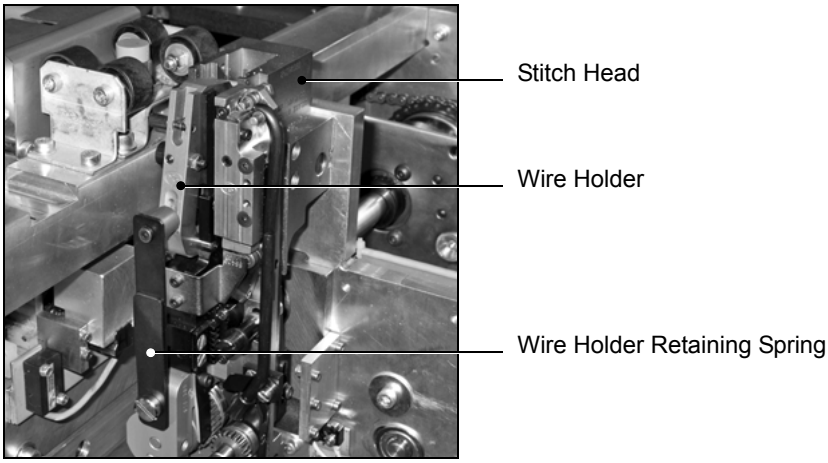



FIGURE 32. Stitch Head Wire Holder

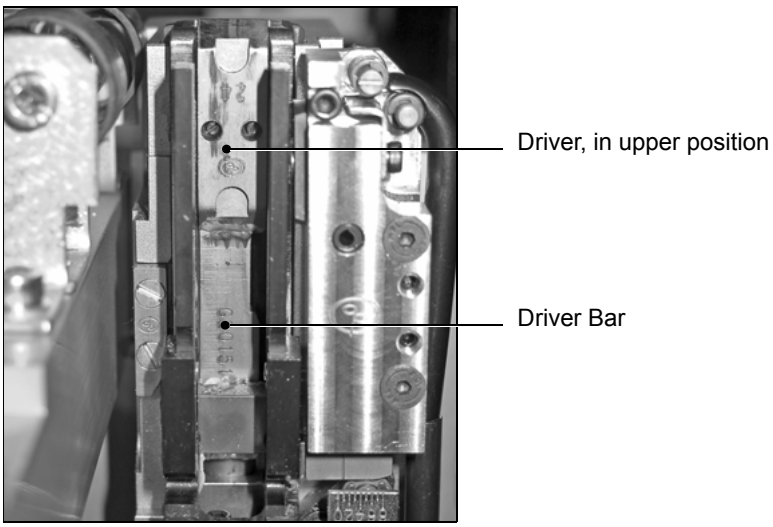
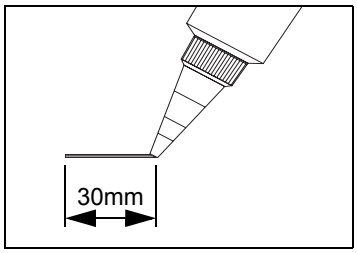
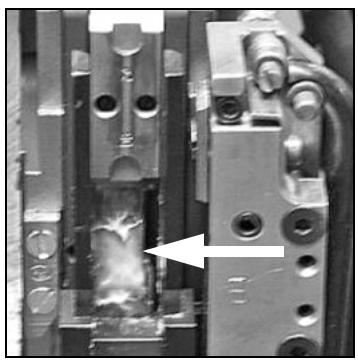



FIGURE 33. Driver Bar

### Before You Begin

| Step | Action | Information |
|---|---|---|
| 1 | Trim the first part from the nozzle. | See Figure 31 on page 61 |
| 2 | Remove the cap from the tube of grease. | |
| 3 | Fit the nozzle to the tube of grease. | |
| 4 | On the user interface, touch ⩥ **ADVANCED** > **STITCHER UP** > **STITCHER UP** | The folder cover must be closed.<br>This action moves the stitch head to the correct position for lubrication. |
| 5 | Lift the PowerSquare main deck. | See “Lift the PowerSquare Main Deck” on page 25. |

### Apply the Grease to the Driver Bar

| Step | Action | Information |
|---|---|---|
| 1 | Use the supplied air duster to remove dust from the stitch head. | |
| 2 | Remove the wire holder from the stitch head. | Move the wire holder retaining spring to the right. Remove the wire holder. See Figure 32 on page 61. |
| 3 | Apply 30mm of grease from the tube to the visible surface of the driver bar. | See FIGURE 33.<br>  <br>  |
| 4 | Fit the wire holder. | |

### Lubricate the Wire-feed Cam

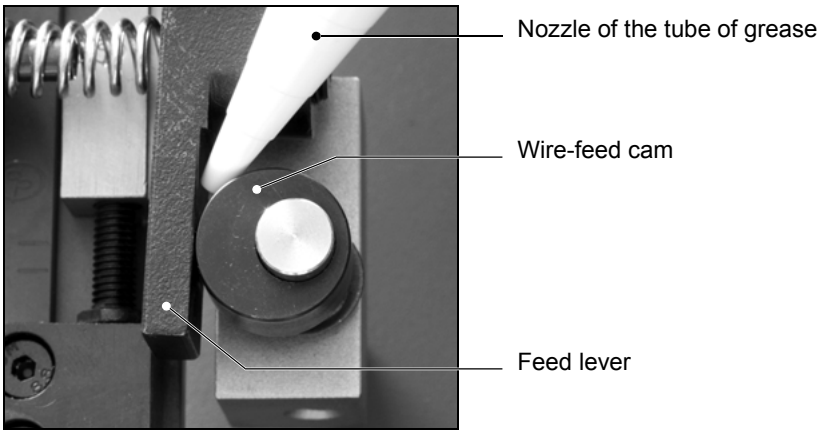
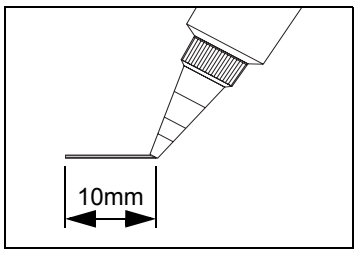



FIGURE 34. Lubricate the wire-feed cam

.

| Step | Action | Information |
|---|---|---|
| 1 | Lift the PSQ main deck. | |
| 2 | Apply 10mm of grease from the tube between the bearing surface of the wire-feed cam and the feed lever. | See FIGURE 34.   |
| 3 | Lower the PowerSquare main deck. | |
| 4 | Lower the clincher frame. | See “Lower the Clincher Frame” on page 24. |
| 5 | Close all of the covers. | |

## Install New Stitch-wire

### Introduction

Only use stitch-wire that is approved by your supplier. Stitch-wire that is not approved by your supplier can cause bad performance and cancels the warranty.

### Stitch-wire Description

- PSQ, Stitch Wire PowerBind 0.6mm 15kg
- Part number 812-038

### Before You Begin

Lift the PowerSquare main deck. See “Lift the PowerSquare Main Deck” on page 25.

### Remove the Stitch-wire from the Stitch Head

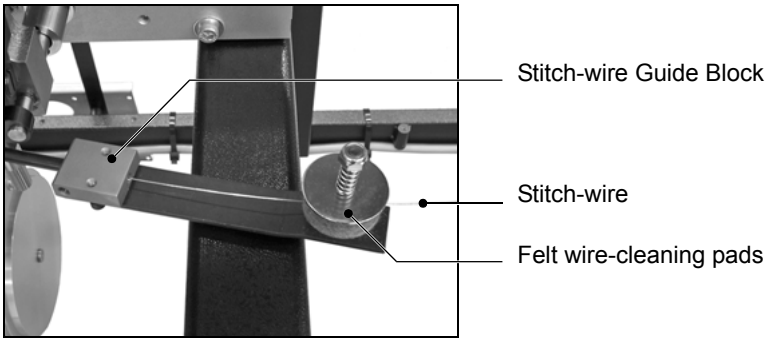
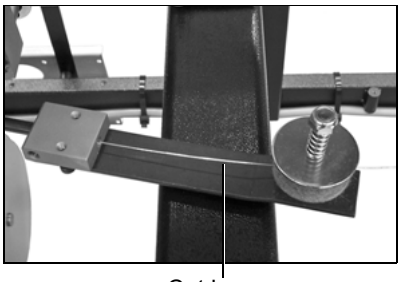
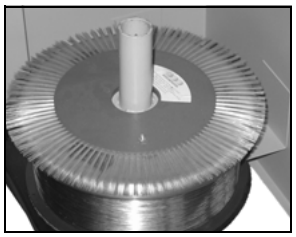
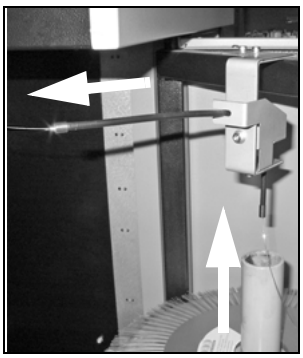


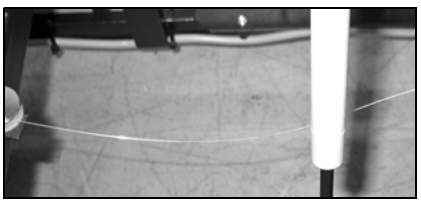

FIGURE 35. Stitch-wire Guide Block

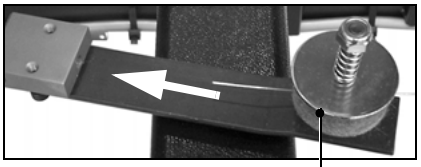
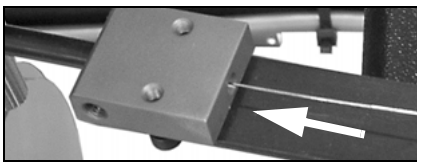
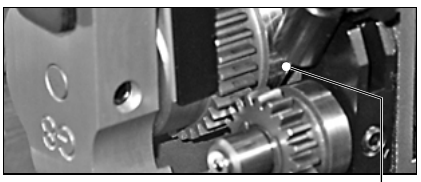
| Step | Action | Information |
|---|---|---|
| 1 | Cut the stitch-wire to the right of the stitch-wire guide block. |  Cut here |
| 2 | Pull the stitch-wire from the stitch-wire guide block. | |
| 3 | Fit a new stitch-wire spool. | See “Fit a New Stitch-wire Spool” on page 65. |

### Fit a New Stitch-wire Spool

| Step | Action | Information |
|---|---|---|
| 1 | Open the stitch-wire cabinet. | |
| 2 | Remove the stitch-wire cap and finished stitch-wire spool. | |
| 3 | Fit a new stitch-wire spool. | |
| 4 | Fit the stitch-wire cap. |  |
| 5 | Loosen the end of the stitch-wire from the edge of the stitch-wire spool. | |
| 6 | Use wire-cutters to remove the damaged end of the stitch-wire. | Remove enough stitch-wire to leave the end of the stitch-wire clean and straight. |
| 7 | Feed the stitch-wire through the stitch-wire guide. |  |
| 8 | Install the stitch-wire. | See “Install the Stitch-wire into the Stitch Head” on page 65. |

### Install the Stitch-wire into the Stitch Head

| Step | Action | Information |
|---|---|---|
| 1 | Pull the stitch-wire from the end of the stitch-wire guide. | |
| 2 | Make sure the stitch-wire runs behind the gas-strut. |  |

| Step | Action | Information |
|---|---|---|
| 3 | Feed the end of the stitch-wire between the felt wire-cleaning pads. |  Felt Wire-Cleaning Pads |
| 4 | Push the stitch-wire into the stitch-wire guide block. |  Push stitch-wire in direction of arrow |
| 5 | Push the stitch-wire as far as possible. |  Make sure the stitch-wire runs between the wire feed rollers and into the middle wire tube. |

### Close the PowerSquare

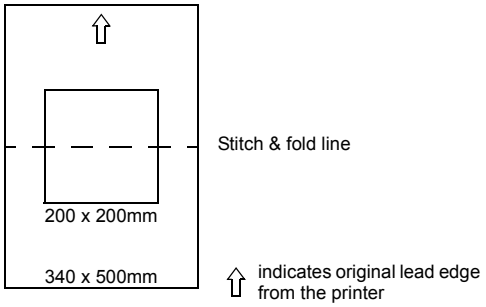
| Step | Action | Information |
|---|---|---|
| 1 | Close the stitch wire cabinet. | |
| 2 | Lower the PowerSquare main deck. | |
| 3 | Lower the clincher frame. | See “Lower the Clincher Frame” on page 24. |
| 4 | Close the folder cover. | |
| 5 | Close the connecting bridge cover. | |

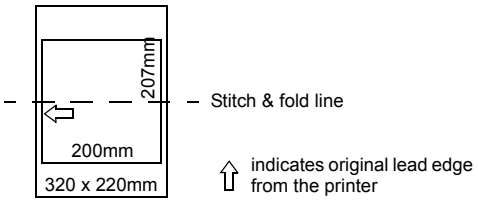
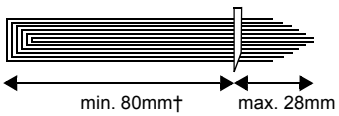
### Feed the Stitch-wire

| Step | Action | Information |
|---|---|---|
| 1 | Touch START | |
| 2 | Set the number of stitches to 6. | See “Job Setting for a Standard Paper Size” on page 7. |
| 3 | Hand-feed or print an A4 or larger size test job. | The stitch-wire loads automatically during the stitch head cycle. |
| 4 | Check the stitch-wire is loaded. | Check that a stitch is made. If needed, repeat the previous step. |
| 5 | Reset the number of stitches on the touch screen. | |

# CHAPTER 7 Specifications

| | |
|---|---|
| **Operating Conditions** | 10-35°C at 35-85% relative humidity |
| **Production** | Cycle time: Printer dependent.<br>Interset gap: 2 seconds<br>Minimum set time: 4.5 seconds<br>Maximum set time: 12.5 seconds<br>Typical set time: 7.5 seconds |
| **Stock Sizes - Online** | Minimum input size: 200 x 200mm<br>Maximum input size: 340 x 500mm |



| | |
|---|---|
| **Sheet Rotation** | Integrated rotator ensures maximum printer productivity.<br>Maximum rotation sheet size: 320 x 220mm<br>Minimum rotation sheet size: 207 x 200mm<br>The cross-track dimension of the sheet (before rotation) must be at least 7mm greater than the in-track dimension.<br>  |
| **Stock Range** | 70 - 250gsm dependent on paper type and quality |
| **Book Thickness** | Maximum finished book thickness: 10mm (approximately 200 pages 80gsm)<br>Maximum set thickness: 5mm (approximately 50 sheets 80gsm) |
| **Stitching** | 1 - 6 stitches, evenly spaced on the spine of the book<br>Stitches/spool: up to 291,500<br>Books*/spool: approximately 127,000 |
| **Trimming** | Maximum fore-edge trim: 28mm<br>Minimum trimmed book size: 80mm<br>  <br>† Serial no. 22 onwards |
| **Stacker Capacity** | 35 books* |
| **Paper Input Requirements** | Input sheets must be of consistent size and cut square.<br>Machine setting must match paper size *at the input to the PowerSquare*.<br>Book quality is dependent upon quality of input sheets. |
| **Dimensions** | Footprint: 1870 x 1675mm<br>Height - 1330mm maximum |
| **Weight** | PowerSquare including stitching wire: 542kg<br>As above, plus bridge and bridge covers: 702kg |
| **Power Supply** | Adjustable to 200, 208, 220, 230 and 240V<br>50/60Hz, single phase |
| **Power Consumption** | stand-by: 92VA (75W)<br>in operation: 700VA (500W) |
| **Noise Emission** | stand-by: ambient<br>in operation: 66 dB (A), peak 87 dB (A) |

| | |
|---|---|
| **Approvals** | Complies with CE and UL. Conforms to FCC rules Part 15 Class A. |

* Standard book is made from 20 sheets of 80gsm paper, with 2 stitches.

Production may vary according to operating conditions. In line with a policy of continual product improvement, the manufacturer reserves the right to alter the materials or specification of this product at any time without notice.

# CHAPTER 8 Declaration of Conformity

| | |
|---|---|
| **Name of Manufacturer:** | Watkiss Automation Limited |
| **Address of Manufacturer:** | Watkiss House<br>Blaydon Road<br>Sandy, Bedfordshire<br>SG19 1RZ<br>United Kingdom |
| *Declares that the product:* | |
| **Name of Product:** | Watkiss PowerSquare™200 |
| **Serial Number** | WA/PSQ/---/0010 onwards |
| *Conforms to the following Product Specifications:* | |
| **Safety:** | 2006/95/EC & 98/37/EC Council Directive 'on the approximation of laws of Member States relating to machinery'.<br>BS EN 60950 : 2002 |
| **EMC:** | 89/336/EEC Council Directive 'on the approximation of laws of Member States relating to electromagnetic compatibility'.<br>EN55022:1998 Class A<br>EN55024:1998<br>EN61000-3-2:2000<br>EN61000-3-3:1995 + A1:2001 |
| | M C Watkiss<br>Technical Director, Watkiss Automation Ltd. |
| | 2nd January 2007 |

WATKISS
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